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**North East Victoria Amateur Radio Club**

<http://nevarc.org.au/>



*An Affiliated club of Wireless Institute of Australia*

*An Affiliated club of Radio Amateur Society of Australia Inc.*



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September

2022

## Next Meeting in September, Sunday 18<sup>th</sup>

Belviour Guides Hall, 6 Silva Drive West Wodonga

Meetings start with 12.00pm BBQ lunch. Call in Via VK3RWO, 146.975, 123 Hz



Back on the 16th July, VK3VS and mini VK3VS went to the VK2RWD repeater site to collect some rubbish. While we were there, mini VK3VS had to check the battery on the VK2RWD repeater and VK3VS cleaned the solar panel. 10AM in the morning, the solar controller was in float mode and we had 14.5V in the battery. The apple does not fall far from the tree.

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The average person's perception of a ham radio operator, assuming they even know what that means, is more than likely some graybeard huddled over the knobs of a war-surplus transmitter in the wee small hours of the morning. It's a mental image that, admittedly, isn't entirely off the mark in some cases. But it's also a gross over-simplification, and a generalization that isn't doing the hobby any favours when it comes to bringing in new blood.

In reality, a modern ham's toolkit includes a wide array of technologies that are about as far away from your grandfather's kit-built rig as could be — and there's exciting new protocols and tools on the horizon. To ensure a bright future for amateur radio, these technologies need to be nurtured the word needs to be spread about what they can do. Along the way, we'll also need to push back against stereotypes that can hinder younger operators from signing on.

On the forefront of these efforts is Amateur Radio Digital Communications (ARDC), a private foundation dedicated to supporting amateur radio and digital communication by providing grants to scholarships, educational programs, and promising open source technical projects. For this week's Hack Chat, ARDC Executive Director Rosy Schechter (KJ7RYV) and Staff Lead John Hays (K7VE) dropped by to talk about the future of radio and digital communications.



Rosy kicked things off with a brief overview of ARDC's fascinating history. The story starts in 1981, when Hank Magnuski had the incredible foresight to realize that amateur radio packet networks could benefit from having a dedicated block of IP addresses. In those early days, running out of addresses was all but unimaginable, so he had no trouble securing 16.7 million IPs for use by licensed amateur radio operators. This block of addresses, known as AMPRNet and then later 44Net, was administered by volunteers until ARDC was formed in 2011 and took over ownership. In 2019, the decision was made to sell off about four million of the remaining IP addresses — the proceeds of which went into an endowment that now funds the foundation's grant programs.

So where does the money go? The ARDC maintains a list of recipients, which provides for some interesting reading. The foundation has helped fund development of GNU Radio, supported the development of an open hardware CubeSat frame by the Radio Amateur Satellite Corporation (AMSAT), and cut a check to the San Francisco Wireless Emergency Mesh to improve communications in wildfire-prone areas. They even provided \$1.6 million towards the restoration of the MIT Radio Society's radome and 18-foot dish.

Of all the recipients of ARDC grants, the M17 project garnered the most interest during the Chat. This community of open source developers and radio enthusiasts is developing a next-generation digital radio protocol for data and voice that's unencumbered by patents and royalties. In their own words, M17 is focused on "radio hardware designs that can be copied and built by anyone, software that anyone has the freedom to modify and share to suit their own needs, and other open systems that respect your freedom to tinker." They're definitely our kind of folks — we first covered the project in 2020, and are keen to see it develop further.

John says the foundation has approximately \$6 million each year they can dole out, and that while there's certainly no shortage of worthwhile projects to support as it is, they're always looking for new applicants. The instructions and guides for grant applications are still being refined, but there's at least one hard requirement for any project that wants to be funded by the ARDC: it must be open source and available to the general amateur population.

Of course, all this new technology is moot if there's nobody to use it. It's no secret that getting young people interested in amateur radio has been a challenge, and frankly, its little surprise. When a teenager can already contact anyone on the planet using the smartphone in their pocket, getting a ham license doesn't hold quite the same allure as it did to earlier generations.



Depending on how old you are, this might have been one of the most shocking moments in *Stranger Things*. The end result is that awareness among youth is low. During the Chat, one participant recounted how he had to put Netflix's *Stranger Things* on pause so he could explain to his teenage son how the characters in the 1980s set show were able to communicate across long distances using a homemade radio. Think about that for a minute — in a show about nightmarish creatures invading our world from an alternate dimension, the hardest thing for this young man to wrap his head around was the fact a group of teenagers would be able to keep in touch with each other without the Internet or phone lines to connect them.

So it's no surprise that John says the ARDC is actively looking for programs which can help improve the demographics of amateur radio. The foundation is looking to not only bring younger people onboard, but also reach out to groups that have been traditionally underrepresented in the hobby. As an example, he points to a grant awarded to the Bridgerland Amateur Radio Club (BARC) last year to bolster their youth engagement program. Funds went towards putting together a portable rig that would allow students to communicate with the International Space Station, and the development of hands-on workshops where teens will be able to launch, track, and recover payloads on a high altitude balloon. Let's see them do that on their fancy new smartphone.

We want to not only thank Rosy Schechter and John Hays for taking part in this week's Hack Chat, but everyone else at Amateur Radio Digital Communications for their efforts to support the present and future of amateur radio and digital communication.

<https://hackaday.com/>

# The Sesquicentenary of the Overland Telegraph



On the 22nd August 1872 the construction of the Overland Telegraph line between Adelaide and Darwin was completed. This year marks the 150th anniversary since this achievement.

It has been described as the greatest engineering feat carried out in nineteenth century Australia.

Within months it was linked to the Java-to-Darwin submarine telegraph cable, and Australia's communication time with Europe was reduced from months to hours.

Australia's isolation from the rest of the world was lessening.

Charles Todd, South Australian Superintendent of Telegraphs, 1872:

We have this day, within two years, completed a line of communications two thousand miles long through the very centre of Australia, until a few years ago a terra incognita believed to be a desert.

The construction started at both ends, Darwin and Adelaide, and the joining point was at Frews Ponds, 25 km south of Dunmarra, Northern Territory, on the 22nd of August 1872.

All telecommunications and the internet in Australia can be pointed back to this moment in time.  
This is the start point.  
Everything evolved from here.

Even when the two points of the line were a few miles apart, they were sending messages by horse-back to complete the gap.

Alice Springs, which was established as a repeater station, became the administrative hub for central Australia.

Doug Johnson VK2XLJ has a fascinating look at this on the website;

[www.ot150.net](http://www.ot150.net)

~WIA News



# NEW ICOM IC-905 MICROWAVE RADIO



Bands: 144 / 430 / 1200 / 2400 / 5600 / 10 GHz  
Modes: SSB, CW, FM, AM, RTTY, DV/DD, ATV

Video: <https://www.youtube.com/watch?v=kzGQWmTKNzc>

The video below shows off the new radio. ATV mode is demonstrated at around the 4 min 30 sec mark. To save you a click, here is a quick transcription of ATV part: "The IC-905 is compatible with ATV in the FM mode. If an analogue camera is connected, the IC-905 can transmit and receive video and also supports enlarged display of the video."

Not sure when the radio will be available.

You don't need to use expensive long runs of low-loss coax for this radio. It uses Ethernet cabling to run to a mast-mounted RF module that then uses a very short run of coax to the antenna to limit losses.

Much more info here:

<https://3fs.net.au/ic-905/the-new-ic-905-vhf-to-10-ghz-amateur-radio/>

and more here <https://www.youtube.com/watch?v=xRPwFFimg8Q>



VHF / UHF / SHF ALL MODE TRANSCEIVER

## Let's Aim Ever Higher!

**144 / 430 (440) / 1200 / 2400 / 5600 MHz / 10 GHz\***

\* CX-10G required

VHF/UHF, and enter the world of SHF. The IC-905 is an all mode transceiver with 144–5600 MHz coverage plus a 10 GHz transverter option. The IC-905 was designed with ICOM's technology, spirit of challenge, and playful mind and shows you a new world in the SHF band.



Controller ▲



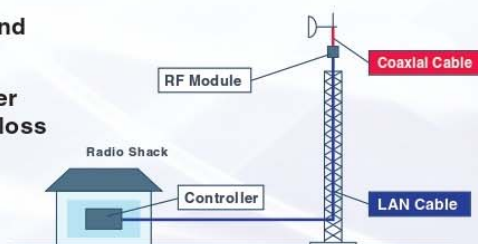
RF Module ▲



### The Industry-First

## 144–5600 MHz / 10 GHz Coverage VHF / UHF / SHF Multi-Bander

- 144 – 5600 MHz / 10 GHz\* coverage with all modes (\* Optional CX-10G Transverter required)
- The separate configuration with the controller and RF module mounted directly under the antenna
- The LAN cable connection between the controller and the RF module significantly reduces power loss
- PoE (Power over Ethernet) technology improves the location of the RF module installation
- ATV (Amateur TV) in the analog FM mode



# SMALL CAPACITORS

Physicists in Europe say they have found a key to creating smaller capacitors, allowing for some electronic devices to be greatly miniaturized.

The IEEE Spectrum reports that scientists are saying these capacitors could even be as small as one-hundredth the size of many of the ones presently in use. They are creating them with materials they call superlattices and they are made from materials that mimic antiferroelectrics.

Antiferroelectrics are important because they have positive and negative poles -- electric dipoles -- pointed in opposing directions, creating zero electric polarization. Exposed to an electric field having sufficient strength, antiferroelectrics can become highly polarized, which results in the large energy densities needed.

Because there are few antiferroelectric materials that occur naturally, scientists have created and used artificial ones and report in the Journal, Science, that their work with the superlattices shows promise for working on a much smaller scale: their ability for energy storing is 100 times greater than conventional capacitors.

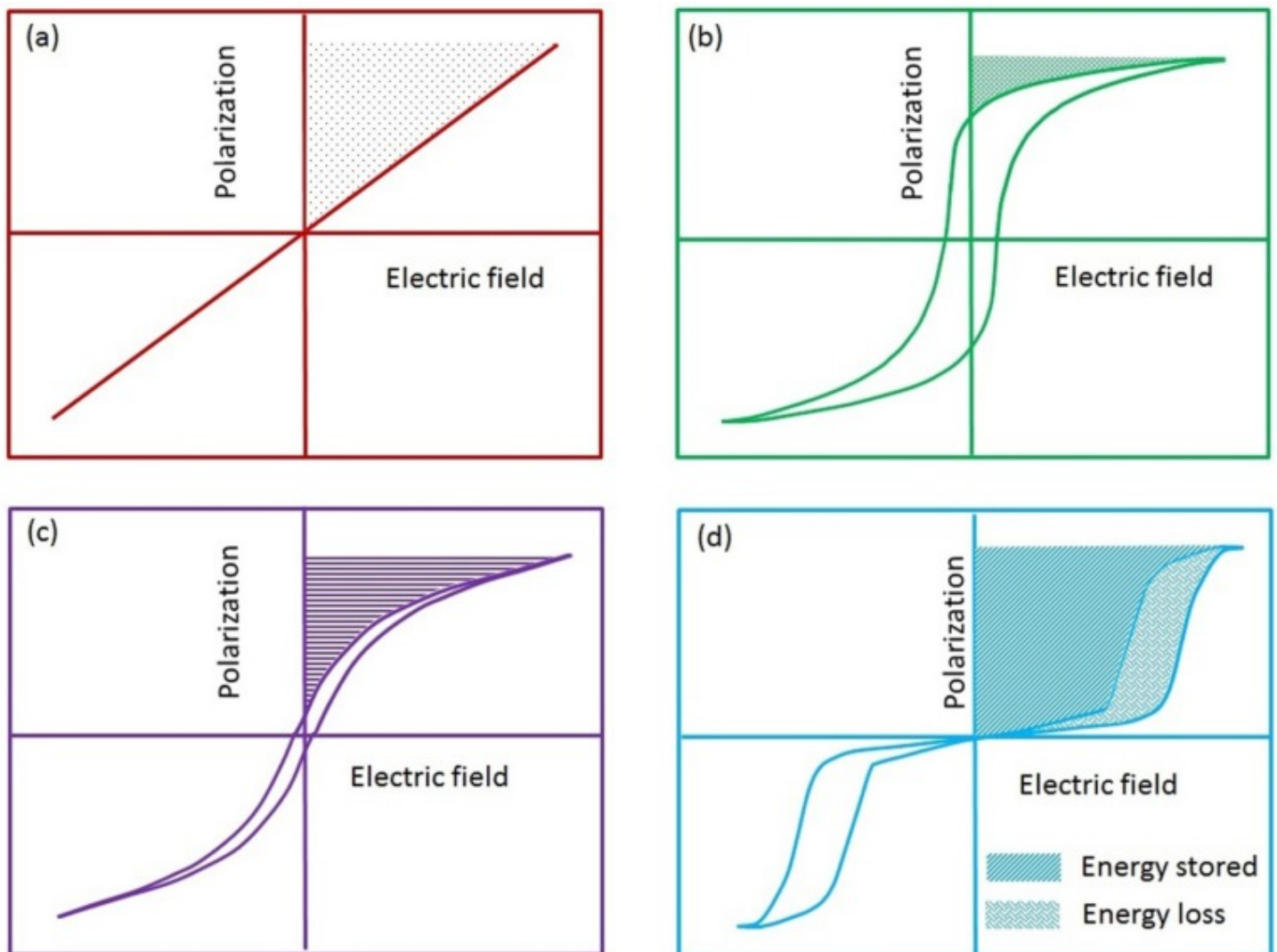


Figure represents the typical polarization versus electric field (P-E) hysteresis loops and energy storage characteristics of the four classes of solid dielectric materials namely (a) linear; (b) ferroelectric; (c) relaxor ferroelectric; (d) anti-ferroelectric (demonstration only; not to scale).

~WIA News



# VK3CH Last Minute Preparation – 10<sup>th</sup> DATV QSO Party 2022

Everything is ready as it can be, of course technical glitches on the day can never be stopped fully.

## WINDOWS DISPLAY SETTINGS

One thing that bugged me was the output to VK3RTV had a black bar down one side.

Eventually I worked out the Windows display settings for the monitor refresh rates were set to a value that the HDMI to CVBS Converter did not like. This is the CBVS output with the black bar on one side.

Changing it to a refresh rate of 50,000 Hz Interlaced on the monitor that the HDMI to CVBS Converter was connected to solve the problem.

With the new setting there were two equally very thin black bars at the edge of my screen output.

I would prefer none at all, but this is the best the HDMI to CVBS Converter will do, still cheaper than a dedicated internal computer video capture card.

## STREAMDECK TRICKS

To make it quick to select what monitor to use I used a preview setting on the Streamdeck keys that actually shows you in real time what each webcam is displaying.

No more reading numbers and having to remember which webcam that selects.

You can actually see what the webcam or computer monitor you are about to select is showing.

For small keys on the Streamdeck the video resolution is quite good.



See the top row keys, you can see what is displayed on each camera or monitor



I could write pages about what the Streamdeck can do, but lots of YouTube videos exist on that. Outside of vMix the Streamdeck can also control your other software programs.

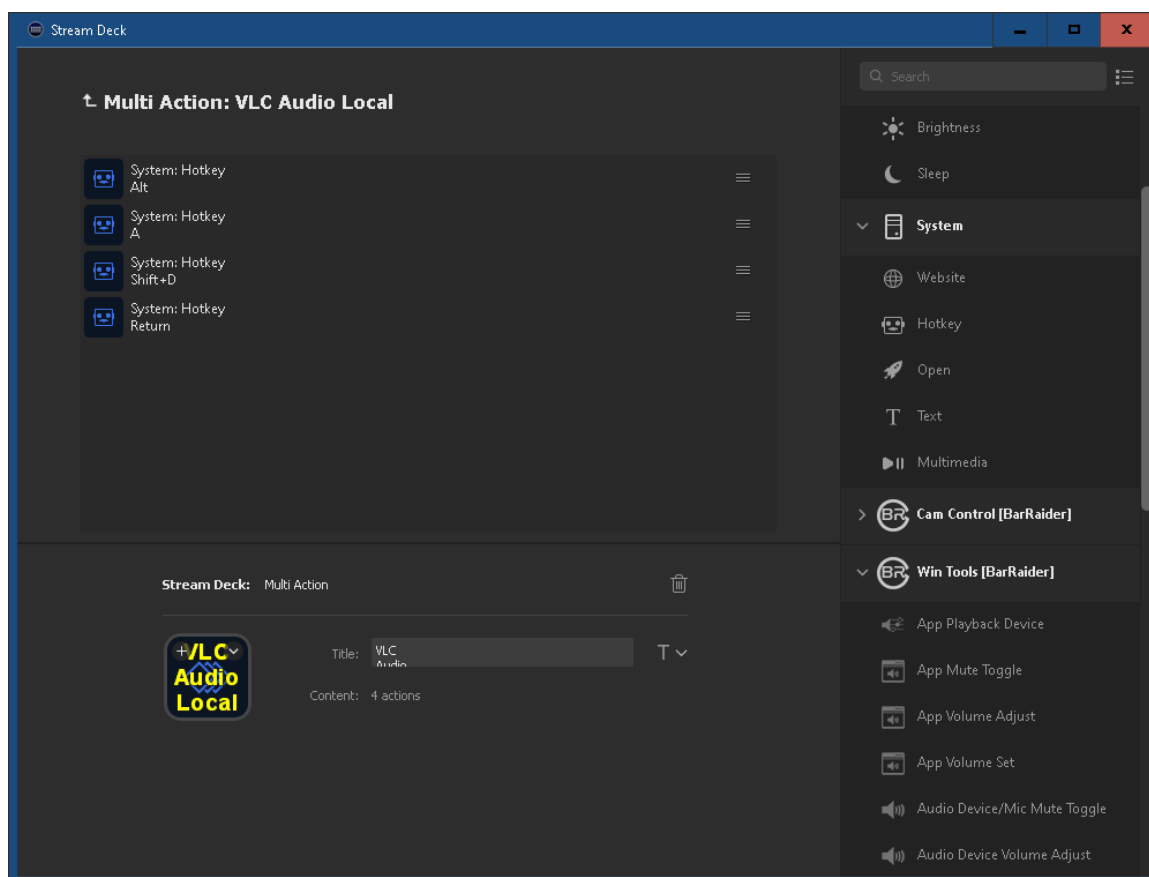
I have VLC but it is setup to forward its audio to the virtual cable in vMix to get transmitted, not played locally on the computer speakers. But when I do want to listen to a local video file or mp3 I have to click through to return audio to the computer speakers. But the Streamdeck can do that in a single press of a key.

In VLC I need to select the audio device, which can be done via the mouse, but with the keyboard it is, ALT+A, then the letter D, then Enter.

With the Streamdeck you use System:Hotkey and drag as many hotkeys that you require.

Then assign the keystrokes to each hotkey, it even scans the keyboard and captures what key you press. Then set the image you want on the Streamdeck key.

I called the key 'VLC Audio Local' but you are free to name you key as you see fit, but the writing needs to be able to be read of course, or you can choose from hundreds of symbols, or make your own.



The key looks just like the preview image when you set it up

## AUDIO PROBLEM SOLVED

One audio problem I had was whenever I had the shack microphone, if I forgot to turn down the computer speakers there was feedback. I tried all sorts of ways to get around this but the only way was to remember to have the sound down when starting vMix.

Further investigation found that each individual audio bus can be selected but then I realized that one of these was the audio that can go to each monitor that has a speaker in it, which is all of them.

So I selected the monitor that has the HDMI to CVBS Converter output feeding the SR-Systems Transmitter. This monitor is designated ITE6604 (NVIDIA High Definition Audio)

Lo and behold I had audio into VK3RTV, via the HDMI to CVBS Converter.

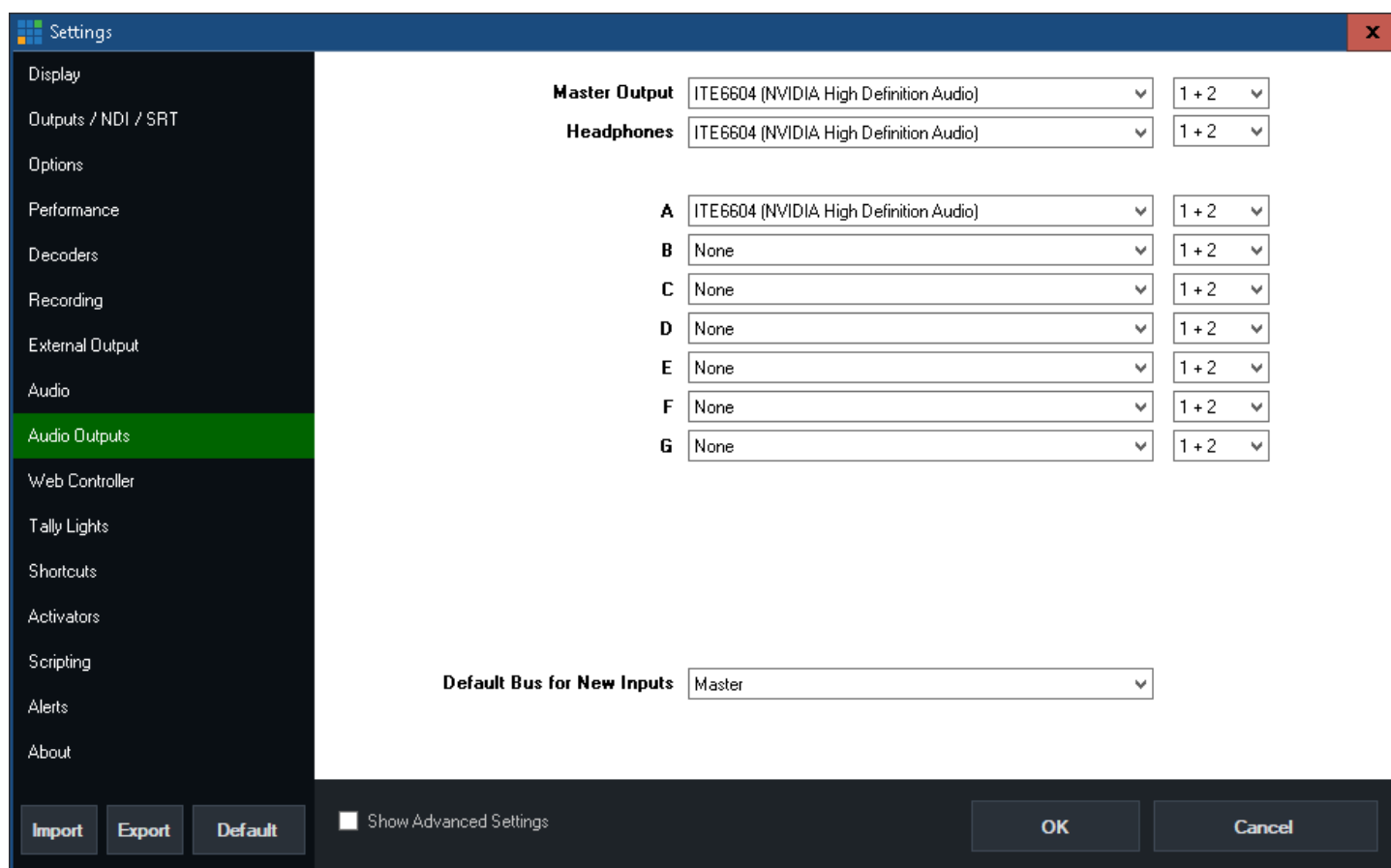
So now the transmitted audio is ported directly to the television transmitter, not via the computer sound card.

Yet another lot of audio cables that can be removed from behind the shack table.

All the audio settings are in vMix.

I made the designated ITE6604 (NVIDIA High Definition Audio) both Master Output and Headphones.

Headphones is just a way of saying vMix monitored audio output, which is normally the entire video productions audio so you can hear the entire session to make any real time changes.



## MORE MASTER AUDIO SETTINGS

With audio now from HDMI this level needed to be adjusted as it was too loud. I was going to use vMix but later realised the audio from the HDMI output was adjustable within Windows. So the ITE6604 (NVIDIA High Definition Audio) was selected and put to 40% which sounded about right. This is easier than setting multiple audio settings in vMix.



## WEBCAM HASSLES

I had one webcam freezing randomly, I swapped it over from the USB Hub direct to the PC USB and that fixed the problem. Sometimes the Streamdeck will randomly disconnect – more USB arrangements need investigation. Better all this happens before the DATV QSO Party.

## vMIX MASTER FILE CORRUPTED

While I had hassles with the webcams a reboot of the PC was required as all the USB ports would lock up including the computer keyboard. One time as vMix was running, but locked up; the reboot corrupted the master settings file. So all my near one months of webcam, audio and titling settings – all gone.

I spent days putting it all back, including remapping the all keystroke shortcuts to the Streamdeck.

Now I will be having backup copies of the vMix master file.



## PULL DOWN GREEN SCREEN

To make the room neater I ordered a pull down green screen.

The dimensions are 1.8 meters height and 2 meters width, the screen can go all the way to the floor if required. I used the same brackets that the muslin cloth was hung from.

But I replaced the curtain rod with some thin galvanized steel water pipe that is stronger, so no sagging.

It works really well with green screen settings in vMix and no fold lines, not that the fold lines bothered vMix.



Now I have both a green screen virtual studio and access to the bookshelf

## USB DRAMAS

After working perfectly now USB webcams and even the Streamdeck would randomly disconnect from the PC. I figured Windows was to blame, not vMix, but you never know.

The solutions suggested online are, *and what I did in italics*;

Reinstall the USB Drivers – *all good, no action required*

Configure Your PC Power Management Settings – *some had turn off power to save energy, reset to always on*

Disable the USB Selective Suspend Setting – *only applies to laptops*

Run the Hardware and Devices Trouble-shooter – *did that, does not suggest anything useful*

Use the DISM and SFC Tools - *did that and it said found errors and fixed them, but does not tell what*

After doing all these, the problem was still there. So I looked at webcams disconnecting instead.

The solutions suggested online are, *and what I did in italics*;

How to reinstall camera driver using Device Manager – *did that and it put the exact same one back in*

Fix apps camera access using antivirus – *made an exception for vMix with my anti-virus software*

Unplug and re-plug in webcam – *only fixes problem for a few minutes, fault still there*

Boot PC - *only fixes problem for a few minutes, fault still there*

So time to think further, maybe too many USB devices annoying Windows.

Also once I had a similar problem when a device outside in the backyard plugged into a USB port gave trouble when the cable outside got wet. Maybe it is time to find another way to get all the outside video and audio to vMix but not via USB ports.

Only webcams were getting connected to USB ports.

## THE CULPRIT FOUND

While on one of the VK3RTV Nets, I quickly disconnected the three cables going outside and for the entire Net vMix behaved and not one USB disconnection or hiccup. So my suspicions about possible wet cables causing some sort of current leakage back to the USB ports on the PC appear a correct guess.

About two years ago the PC was acting strange and would reboot at random, which was really annoying to say the least. The same problem was found a cable attached to a USB port that went outside.

Once that cable was removed all problems vanished.

I never found any cut or damage to the cable, but moisture must have gathered enough to annoy the currents in the USB ports.

Lucky I suppose that no real permanent damage was done to the computer motherboard.



## VIDEO CAPTURE CARD

I got a Decklink Mini Recorder HD capture card. This was going to take the output from the six way video switcher, via HDMI. A CVBS to HDMI adapter mid way would convert the CVBS from the switcher, then into the Decklink Mini Recorder HD capture card. I first proved that it would work by inputting the HDMI from the CVBS to HDMI adapter into a monitor and yes the video from outside was seen OK. Sometimes with long cable runs like what I have, not enough video signal is present, but it was all good.

Installing it means pulling out all my USB connections, but time for improvements anyway.

As it is HD and industry leaders would be using 4K or higher, the HD was not expensive, probably considered “old hat”. Certainly good enough for Amateur Television.



← Decklink Mini Recorder HD in the box, ready to deploy

↓ CVBS to HDMI adapter



The capture card has no software; you download it all and the user guide.

The specifications say;

*The Blackmagic Design DeckLink Mini Recorder HD is suitable for capturing broadcast quality video from 3G-SDI and HDMI sources with any PCIe computer. You can capture from virtually any SD or HD source including HDCAM, D5, SDCAM, Digital Betacam and more. DeckLink Mini Recorder HD also works with popular video streaming software such as OBS so customers can capture from cameras or live productions switchers and integrate the video directly into live broadcasts.*

*The new DeckLink Mini HD models are low profile 1 lane Gen 2 PCI Express cards that fit easily into either desktop or rack mount server style computers with the included full height and low profile PCIe shields. They can capture from decks, cameras and live video sources, and output to monitors, projectors, media servers and more. This is perfect for editing, compositing, graphics production and unlimited broadcast and post-production situations where the highest quality video and true versatility are demanded.*





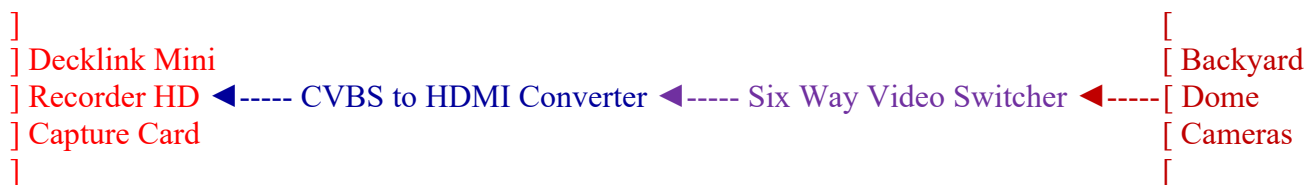
## VIDEO CAPTURE CARD SOLVES MULTIPLE PROBLEMS

I found that the video feed going direct into the SR-Systems Transmitter was enough, but for the CVBS to USB 2.0 device it required signal boosting. This would have meant another thing in line to fix that.

So I thought better test the concept, so I got the outside signal from the backyard and fed it to a CVBS to HDMI converter and put that to a monitor and a perfect picture and sound.

So that means the HDMI feed into the Decklink Mini Recorder HD capture card will work.

The new arrangement;



The new arrangement will now replace three of the video and microphone USB ports that went outside. This will also free up three USB ports and take some stress of the USB data throughput.

## THE RESULTS

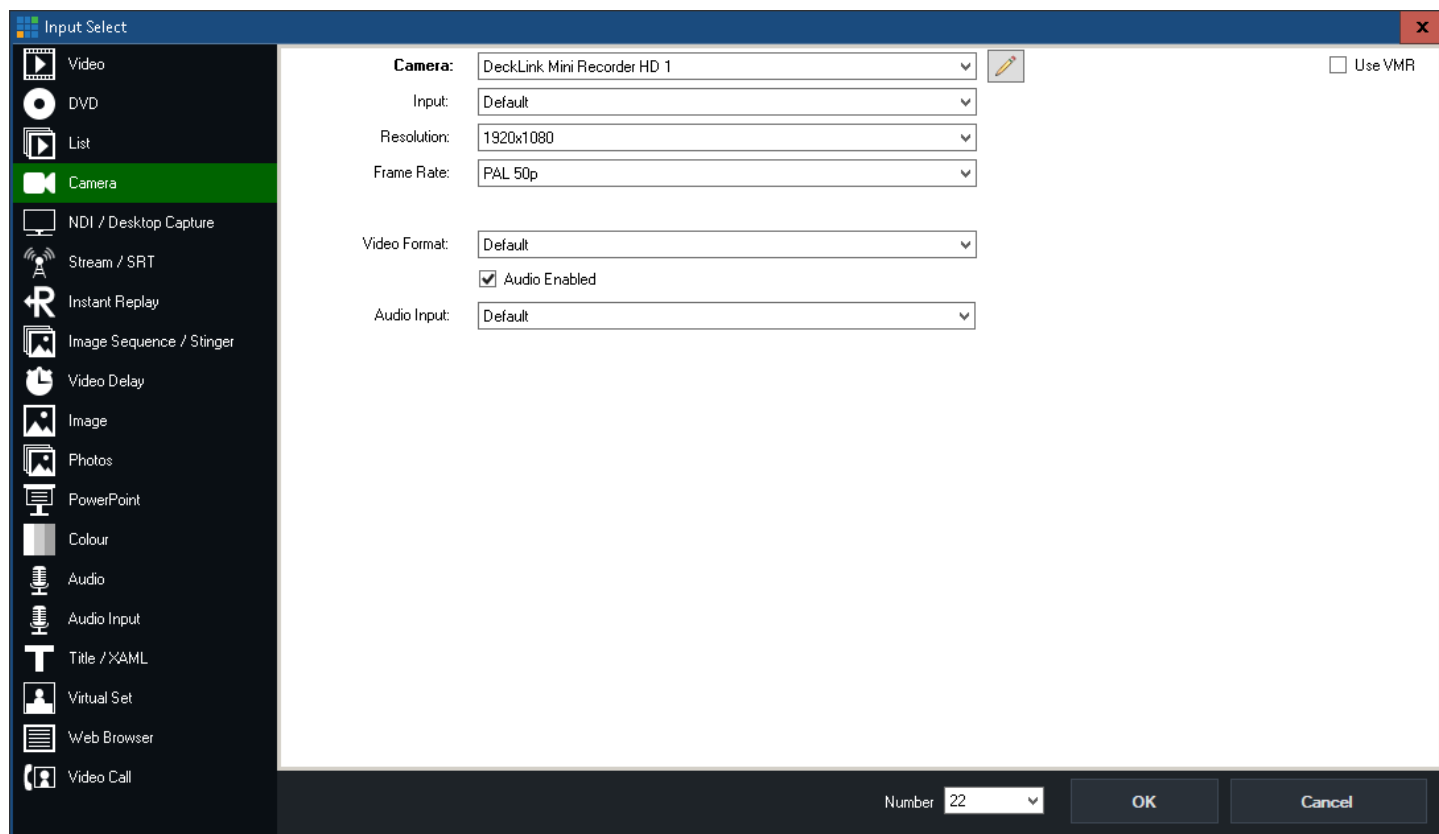
I installed the card, installed the software, rebooted the PC, then started vMix and searched for the capture card. It was listed as Deck Link Mini Recorder HD 1.

It allowed a very HD input of 1920 x 1080, PAL50p

It worked first go – thank you very much.

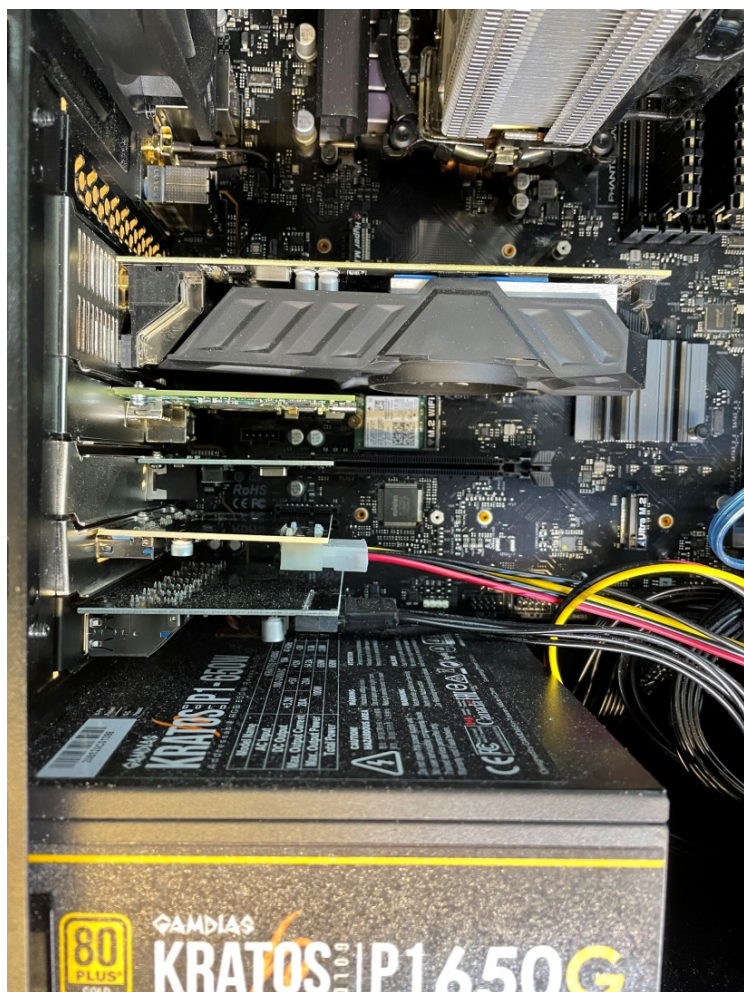
The analogue cameras look nearly as good as the webcams, I struggle to pick the difference.

The audio gain and audio equalization was set like the other audio inputs.



## COMPUTER EXPANSION SLOTS NOW FULL

With the addition of Decklink Mini Recorder HD capture card the computer expansion slots are full. The four port USB was kept as this allows one more webcam to be used.



## OUTSIDE WIRELESS USB MICROPHONE RECEIVER RELOCATION

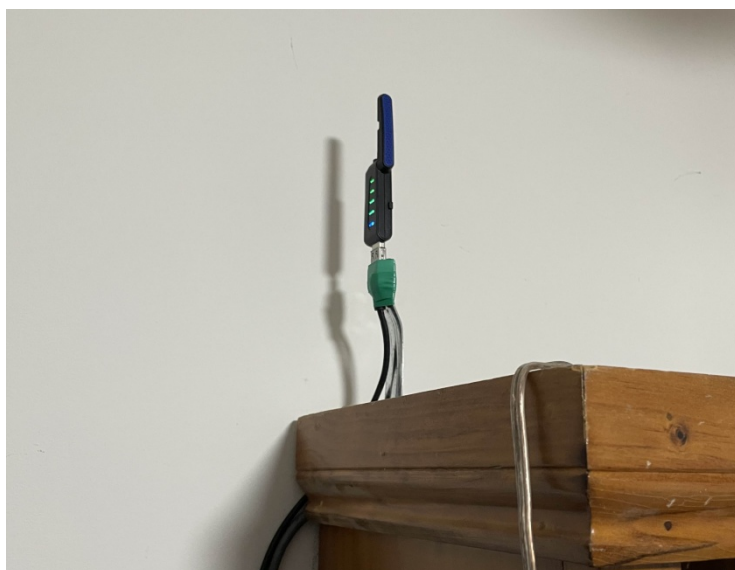
With outside USB leads giving problems the USB receiver for the silver microphone was put in the radio room on top of a bookshelf.

It was originally here years ago, but outside gave a bit more range.

After moving it back inside I tested the reliable distance and good clear audio was heard from the letterbox and front of the property, including the middle of the street roadway.

The backyard was only reliable as far as the clothesline, any further and it was a bit scratchy and broken.

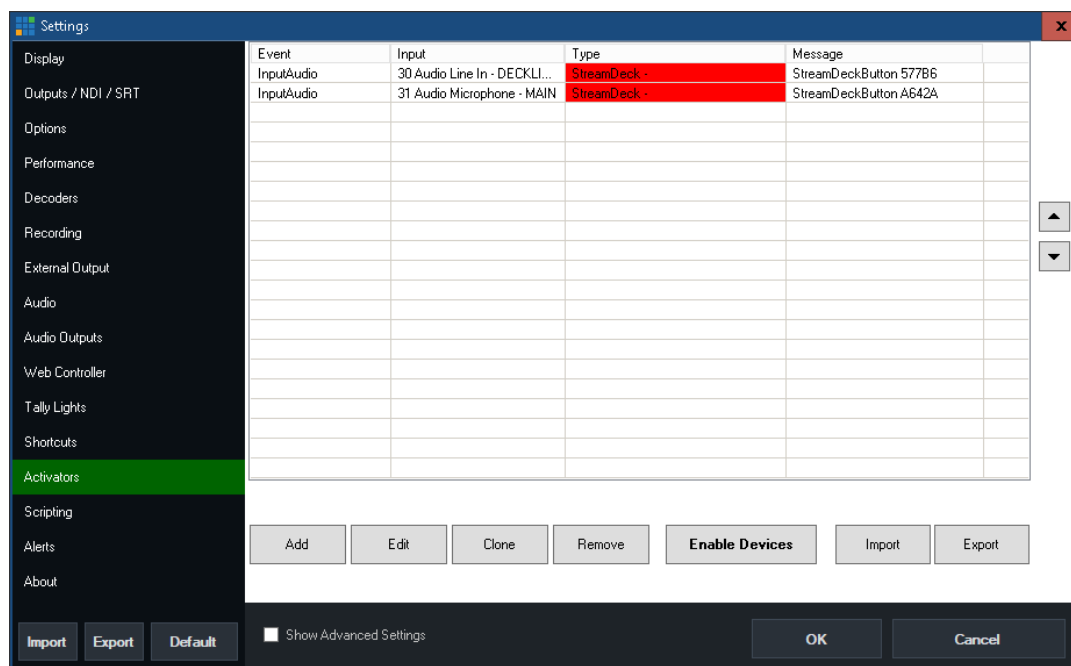
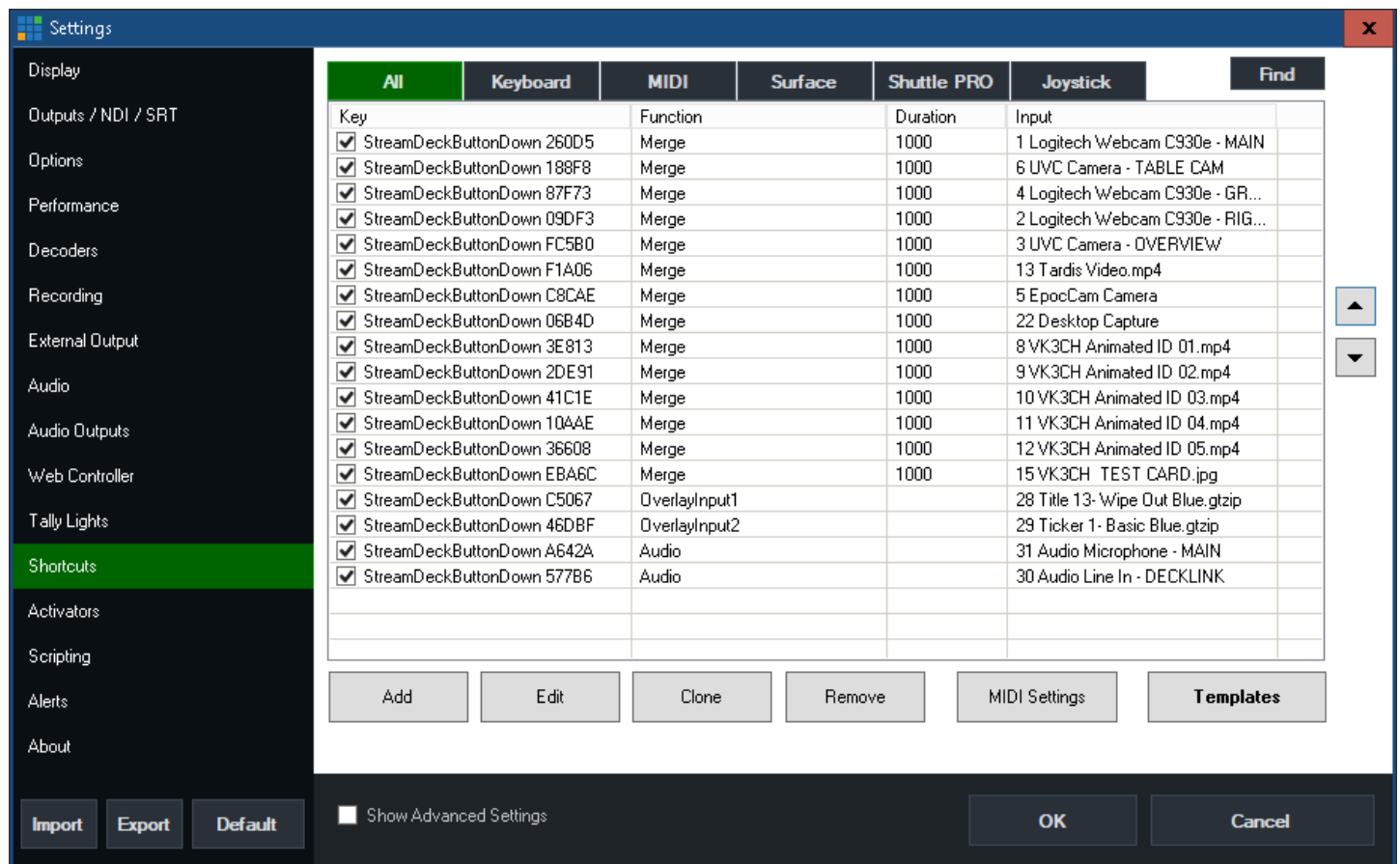
All the BBQ area was solid copy, which will be the main use in summer.



## RESTORATION OF vMIX SETTINGS

With the loss of my vMix settings they were redone and saved with a backup.

vMix has a clone function so you can copy common settings and just adjust the device and key on the Streamdeck you want to assign the shortcut to. The vMix control file was completed in a few hours. But I will take a backup file next time thanks.

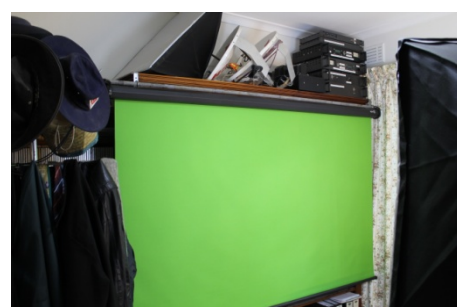
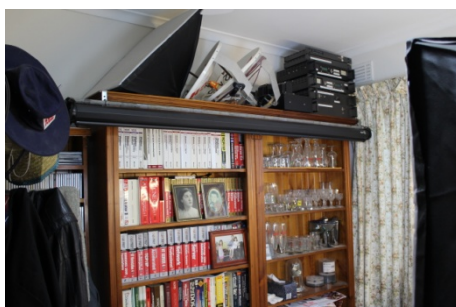


Activators give visual cues on your key, when my microphone is 'live' the key glows red



## SLIDESHOW VIDEO PRODUCTION

Like last year a pre-recorded video slide show was done weeks before the DATV QSO Party. As many stations get on air for the DATV QSO Party, time is tight, so a pre-recorded video stops you from accidentally going overtime on air, the video can be played with a key press of the Streamdeck. The screen shots of the stills used are seen here, a voice narration provides the details, 3 minutes, 20 seconds.



## WEBCAM UPGRADE

The webcams used for the table view and shack overview were cheap and nasty so they were replaced with Logitech C930e webcams with a much better resolution.

Especially the table cam with digital zoom function in vMix, makes the equipment on display much clearer to those watching. Now the entire radio room is covered by five Logitech C930e webcams.

Another C930e webcam is spare, mounted on a tripod when something else needs to be filmed.

## WIRELESS LAPEL MICROPHONE

After using cheaper lapel microphones it was time to upgrade to a proper lapel microphone system. The cheap stuff on EBay is just that – cheap. I purchased an LD Systems U306BPL. The specs say;

*The LD Systems U306BPL wireless headset and body pack microphone is the newest addition to the popular U-Series from LD Systems. Developed in Germany with true UHF diversity to deliver excellent audio performance. Operating in the B6 Frequency band (655 – 679MHz) and capable of reaching up to 100m range in ideal conditions. Up to six U300 systems can be used simultaneously in each frequency band. Convenient one-touch synchronisation via infrared ensures fast, and problem-free wireless connection between the transmitter and receiver, while a squelch with pilot tone helps prevent interference.*

*The LD Systems U306BPL body pack transmitter has a 10 mW output and lasts around 10 hours on two AA batteries. Created for instrument and speech applications with a smooth frequency response from 25 Hz to 16 KHz. The power switch features a handy standby mode for temporary muting. The U300® receiver is fitted with a bright LCD channel display, an LED chain for displaying audio signal strength and both a balanced XLR and an unbalanced 6.35 mm audio output. The audio output can also be switched to instrument level for directly connecting to guitar and bass amplifiers.*

With the claimed range of 100 meters the entire property is covered, even if the reliable range was only 25 meters that would still cover the entire property from the location of the receiver in the radio room, roughly near the centre of the house property, including to the other side of the street.

This transmits on the legal Australian Wireless Microphone spectrum.

It also has a switchable CTCSS tone, so if another microphone signal appears over your microphone frequency, without the sub audible tone, it is ignored, stops unwanted audio transmissions going live to air, very handy.

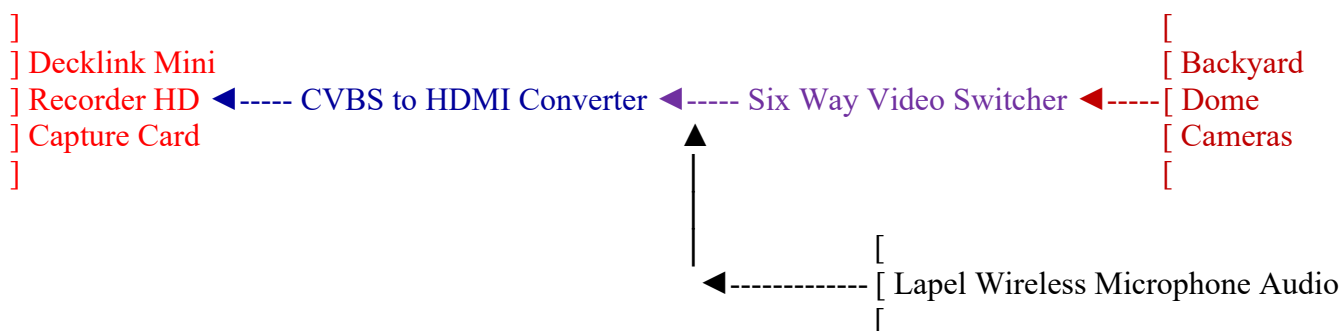
Now I can have both hands free, one for a beer and the other for the BBQ tongs...

I was going to interface this to vMix via the USB Audio capture device, but vMix went crazy when I plugged in the USB device, maybe these are too temperamental. So I decided as the lapel microphone would be for outside use, the audio was piggybacked into the outside deck audio from the six way switcher. Audio levels can be adjusted on the lapel receiver unit.

RCA Audio Combiner →



The new appended arrangement







The wireless lapel microphone unit and receiver, under test, on top of the IC-9100

I took a walk with the lapel microphone and narrated where I was walking for a distance test. Back home I looked on Google Earth and with the transmitter device inside my jacket a reliable distance noise free is 35 meters, which is way more than I need. It starts to get a little scratchy slowly until 50 meters and a lot more scratchy noises after 60 meters distance, but still understood copy. But for professional sounding copy under 35 meters is fine. This is just at the edge of the properties either side of ours. All of the home property area of a quarter acre block is solid copy, that will suffice our needs.



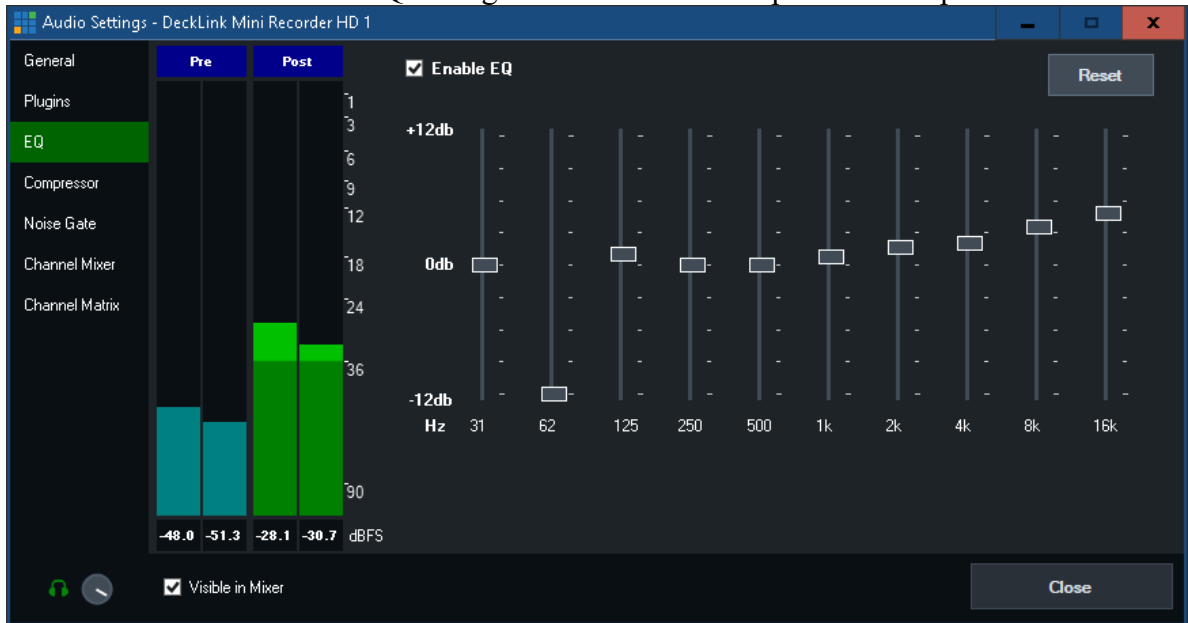
But I did hear some AC hum when the Decklink Capture Card input was used, possibly with three inputs all ganged together being the wired microphone, lapel microphone receiver and the six way audio visual mixer for audio from the backyard deck.

So the easy way to remove the AC hum was to EQ it away.

This made the audio a little thin, but no hum.

I may adjust it some more while on the repeater to get the best sound.

The altered EQ settings for the Decklink Capture Card input



The lapel receiver in its final position on the radio bench all wired up

## ANOTHER USB MICROPHONE

A USB Microphone for outside was bought, the difference in sound is quite noticeable. USB microphones seem to vary in sound depending on the style and price.

This one has a lot more bass, but the audio graphic equaliser fixed the sound up OK. All frequencies below 1kHz were left flat and the higher frequencies boosted.

New bee NB-DM19-DESK-MIC Desk microphone



Part of the specs say: *“Cardioid Pickup Precisely & Hi-fi chipset: Our high grade microphone is equipped with a cardioid pickup system, which can collect human voice clearly and accurately and to avoid noise effectively. Built-in sound card can both make the high pitch clear and keep the median smooth, also enable to steady the bass. All in One Kit: The package includes a non-slip tripod and a 1.5m usb cable. It contains with a high-quality metal mesh to prevent popping noise and splashing. No additional purchase of pop filter or other accessories is required. The angle of the microphone can be adjusted arbitrarily to achieve a better sound effect. ”*

I think the bass could have done with some more reduction, but that is only comparing it to a much more higher quality USB microphone.

The internet is divided on opinion of the worth of USB microphones compared to the normal microphones, but for use with Amateur Radio Television via vMix, they do the job and sound reasonable under most situations.

The audio graphic equaliser and gain controls in vMix tidy up the audio good enough. We will not be singing or sending music videos, so USB microphones are just another option.

OK we are ready, bring on the 10<sup>th</sup> DATV QSO Party.

~Mick VK3CH

# 10<sup>th</sup> World-Wide DATV QSO Party – August 2022

## *Every Pixel Tells a Story*

### **TIMELINE 10 YEARS OF THE WORLDWIDE DATV QSO PARTY**

2011	1 <sup>st</sup> DATV QSO Party 100 Years of Amateur Radio Victoria
2012	2 <sup>nd</sup> DATV QSO Party
2013	3 <sup>rd</sup> DATV QSO Party
2014	4 <sup>th</sup> DATV QSO Party
2015	5 <sup>th</sup> DATV QSO Party
2016	6 <sup>th</sup> DATV QSO Party
2017	7 <sup>th</sup> DATV QSO Party
2018	Not Held - VK3RTV, Out of Service, Moving from Olinda to Mount View
2019	Not Held - VK3RTV, Out of Service, Moving from Olinda to Mount View - COVID-19 first reports
2020	8 <sup>th</sup> DATV QSO Party - VK3RTV Tuesday Night Nets start late July
2021	9 <sup>th</sup> DATV QSO Party
2022	10 <sup>th</sup> DATV QSO Party

The 2011 DATV QSO Party was sponsored originally by Amateur Radio Victoria and was a part of its 100 year celebration but has continued on now over a number of years.

Friday night was Australia only as usual. Bevan VK5BD (Whyalla/Port Perie) used our SRT input system as did Roland KC6JPG (Los Angeles) and Bill AB0MY (Boulder, Colorado) on our Saturday morning, their Friday night. Bevan Roland and Bill will be fed video received from their local Repeaters. This is exactly the right concept, maximise the use of amateur radio frequencies and only use the Internet as a link.

For those that have seen the SRT process the video is of a high quality. Special thanks to Phil VK3GMZ with assistance from Rob VK3RTX for installing this technology.

SRT users should be aware that VK3RTV is 'first in, best dressed' as the saying goes. VK3RTV treats the SRT input as any other normal input. SRT stations need to drop the SRT link when it was time for Australian stations to respond or when they finished their session.

### **SRT - SECURE RELIABLE TRANSPORT PROTOCOL**

SRT is a video streaming transport protocol and technology stack designed to connect two endpoints for the purposes of delivering low latency video and other media streams across lossy networks such as the public internet. In a nutshell, SRT brings the best quality live video over the worst networks. It accounts for packet loss, jitter, and fluctuating bandwidth all while maintaining the integrity and quality of video. With SRT, you can keep your streams secure and easily traverse firewalls.

Because SRT operates at the network transport level, acting as a wrapper around your content, it can transport any type of video format, codec, resolution, or frame rate.

Thanks to SRT's security and reliability, the public internet has now become a viable option for an expanded range of streaming applications. SRT offers significant operational flexibility and cost savings compared to satellite or custom network infrastructures.



## FRIDAY NIGHT SESSION

The session started at 7.30pm local time and went until 10.20pm local.

The presentations can be summarised in four words – Effort, Engineered, Expensive, Enthusiastic. Some of the station setups were really fantastic, so much care and work over what must be many years for some operators. The presentations were very professional and wide range of aspects of the amateur radio hobby were on display. Technical glitches were few, audio seems to still be the biggest factor, but the SRT links were faultless and very high video quality.

Peter Cossins VK3BFG started the night, then across to VK2, then back to VK3, followed by VK5, then back to VK2, then VK3 and VK5 with Peter VK3BFG wrapping up the night.

The running order was: Garry VK2CRJ, John VK2ATU, Paul VK2JEL and Simon VK2ZSJ. Then back to Victoria with Mick VK3CH, John VK3ATV, Richard VK3VRS and Bruce VK3VRS. To South Australia with Bevin VK5BD, John VK5KJG, Roger VK5YYY and David VK5DMC. Back up to Sydney with John VK2ATU and Garry VK2CRJ. Back to Melbourne with Clint VK3CSJ, Dennis VK3YLH, Ian VK3QL, Neil VK3BCU and Mick VK3CH. Then Bevin VK5BD, John VK5KJG and Roger VK5YYY. In closing Peter VK3BFG thanked everyone for their presentations and the anchors and back channel operators with the SRT links for all their help.

But we all think it is both Peter VK3BFG and Phil VK3GMZ that deserve all the credit for all the work that goes into making VK3RTV such a versatile television repeater. Thanks also to both Ian VK3QL and Neil VK3BCU for assistance and linking support for Peter VK3BFG.



Peter Cossins VK3BFG with the starting welcome address

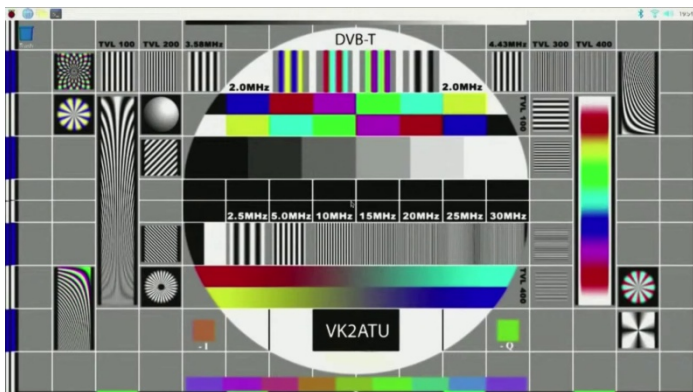




Garry VK2CRJ



John VK2ATU



John VK2ATU



Paul VK2JFL



Simon VK2ZSJ



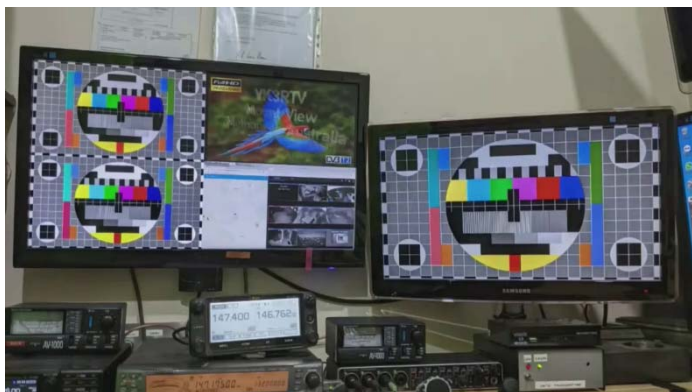
Mick VK3CH



John VK3ATV



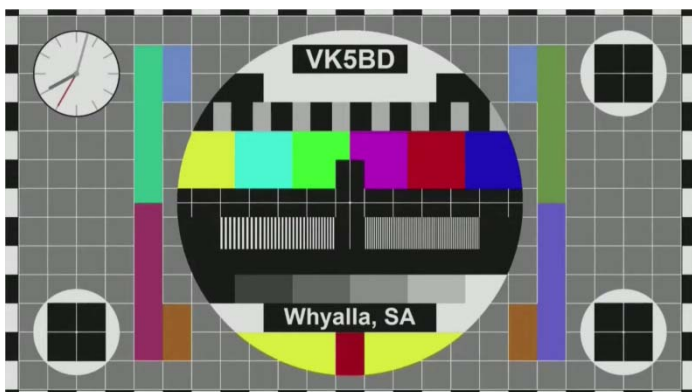
Richard VK3VRS



Richard VK3VRS



Bruce VK3MN



Bevin VK5BD



Bevin VK5BD



John VK5KJG



Roger VK5YYY



Roger VK5YYY

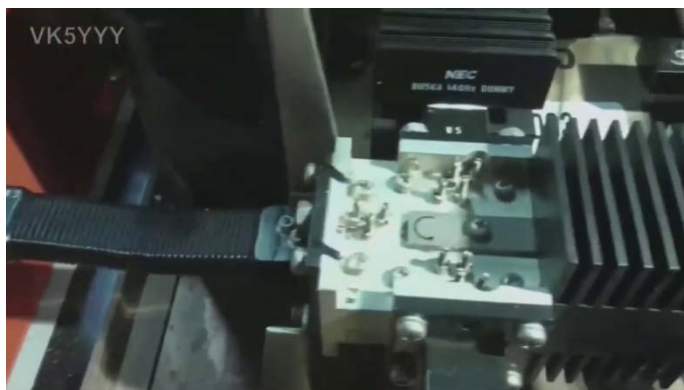


Roger VK5YYY





Roger VK5YYY



Roger VK5YYY



David VK5DMC



David VK5DMC



John VK2ATU



Garry VK2CRJ



Clint VK3CSJ



Clint VK3CSJ





Dennis VK3YLH



Dennis VK3YLH



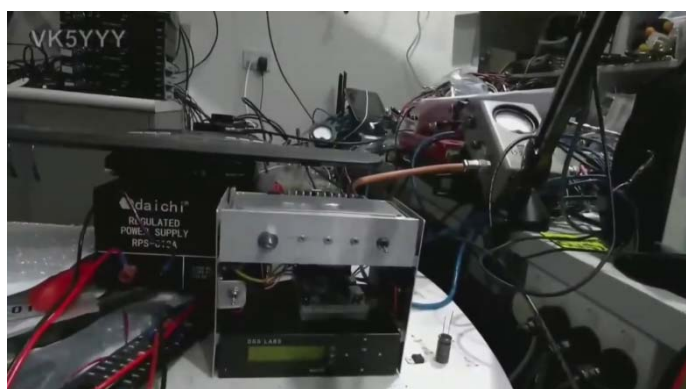
Ian VK3QL



Neil VK3BCU



Mick VK3CH



Roger VK5YYY



Peter VK3BFG

## SATURDAY SESSION

For the USA, the QSO party started with Art Towslee - WA8RMC for the eastern US, followed by Bill Eberle - AB0MY, for Boulder / mid US, then Lee Weitzel - K0CCU representing Arizona, Jim Tittle - K6SOE leading Mt. Diablo, Ben Carlucci - W2NYC representing the Silicon Valley ATV, and Roland with the six ATV repeaters in SoCal, and one ATV repeater in Nevada. The Boulder coordinator is Bill, AB0MY.

The Saturday session was a new record for time and stations attending. Peter Cossins was very happy with how it all went with only some glitches which due to live television will always happen, but no one lets that spoil the event. Even with reduced bandwidth internet at his QTH, Peter VK3BFG still put on a fantastic DATV QSO Party with help from all the anchors both VK and USA.

Some screen grabs of the international stations on Saturday, or their Friday night locally, as the VK stations were on also the day prior I have not reproduced their pictures as details are similar to the previous day.







The first session was done via Zoom, then the rest used the new SRT link. Peter Cossins reduced bandwidth only just coped with the linking, but the ISP was to blame. All the VK stations that transmitted Friday also returned for the Saturday session. Peter thanked both Ian VK3QL and Neil VK3BCU for all their help with linking. VK3RTV was on air from 9.30am until just past 2.00pm Melbourne time.

Friday session, Part 1 VK3QL YouTube link  
Saturday session, Part 2 VK3QL YouTube link

<https://www.youtube.com/watch?v=DnSbYCOXA1Q>  
<https://www.youtube.com/watch?v=ftI1RoGUi8g>





A very happy Peter VK3BFG with the closing address

### 10th DATV QSO Party - Pt1 Australian stations only - Friday 26 August 2022

Station	Network
Peter VK3BFG	VK3RTV, Mount View, Melbourne
Gary VK2CRJ	VK2RTS, Lawson Blue Mtns, SRT to VK3RTV
John VK2ATU	VK2RTS
Paul VK2JPL	VK2RTS
Simon VK3ZSJ	VK3RTV, Mount View, Melbourne
Mick VK3CH	VK3RTV
John VK3ATV	VK3RTV
Richard VK3VRS	VK3RTV
Bruce VK3MN	VK3RTV
Bevan VK5BD	VK5RDC, The Bluff Port Pirie & Whyalla
John VK5KJG	VK5RDC
Roger VK5YYY	VK5RDC
Dave VK5DMC	VK5RDC
Bevan VK5BD	VK5RDC
John VK2ATU	VK2RTS, Lawson Blue Mtns, SRT to VK3RTV
Gary VK2CRJ	VK2RTS
Clint VK3CSJ	VK3RTV, Mount View, Melbourne
Denis VK3YLH	VK3RTV
Ian VK3QL	VK3RTV
Neil VK3BCU	VK3RTV
Mick VK3CH	VK3RTV
Peter VK3BFG	VK3RTV
Bevan VK5BD	VK5RDC, The Bluff Port Pirie & Whyalla
John VK5KJG	VK5RDC
Roger VK5YYY	VK5RDC
Bevan VK5BD	VK5RDC
Peter VK3BFG	VK3RTV, Mount View, Melbourne

## 10th DATV QSO Party - Pt2 Australia/International - Sat 27 Aug 2022

Station	Network
Peter VK3BFG	VK3RTV, Mount View, Melbourne
Art WA8RMC	ATCO/DARA Columbus, Ohio on Zoom
Dave AH2AR	ATCO/DARA
Tom W6ORG	ATCO/DARA
Rick WA6NUT	ATCO/DARA
Bevan VK5BD	VK5RDC, The Bluff Port Pirie & Whyalla
John VK5KJG	VK5RDC
Bevan VK5BD	VK5RDC
John VK5KJG	VK5RDC
Gary VK2CRJ	VK2RTS, Lawson Blue Mtns, SRT to VK3RTV
John VK2ATU	VK2RTS
Gary VK2CRJ	VK2RTS
Bill AB0MY	W0BTB Boulder, Colorado, SRT to VK3RTV
Don N0YE	W0BTB
Jim KH6HTV	
Bill AB0MY	
John VK3ATV	VK3RTV, Mount View, Melbourne
Mick VK3CH	VK3RTV
Don N0YE	W0BTB Boulder, Colorado, SRT to VK3RTV
Neil VK3BCU	VK3RTV, Mount View, Melbourne
Peter VK3BFG	VK3RTV
Roland KC6JPG	ATN Southern Calif. Chapter
Jim K6SOE	Arizona Chapter (ATN-AZ)
Roland KC6JPG	ATN Southern Calif. Chapter
Lee K0CCU	Arizona Chapter (ATN-AZ)
Roland KC6JPG	ATN Southern Calif. Chapter
Bevan VK5BD	VK5RDC, The Bluff Port Pirie & Whyalla
John VK5KJG	VK5RDC
Roger VK5YYY	VK5RDC
Dave VK5DMC	VK5RDC
Bevan VK5BD	VK5RDC
Roland KC6JPG	ATN Southern Calif. Chapter
Manuel M2MJF	ATN New York city Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
Mike W6KVC	ATN Southern Calif. Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
John AF7PA	ATN Southern Calif. Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
John VK2ATU	VK2RTS, Lawson Blue Mtns, SRT to VK3RTV
Gary VK2CRJ	VK3RTV
Roland KC6JPG	ATN Southern Calif. Chapter
Gary W6KVC	ATN Southern Calif. Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
Rod WB9KMO	ATN Southern Calif. Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
Richard VK3VRS	VK3RTV, Mount View, Melbourne
Roland KC6JPG	ATN Southern Calif. Chapter
Joel KD6W	ATN Southern Calif. Chapter
Roland KC6JPG	ATN Southern Calif. Chapter
Ian VK3QL	VK3RTV, Mount View, Melbourne
Bevan VK5BD	VK5RDC, The Bluff Port Pirie & Whyalla
Roger VK5YYY	VK5RDC
Peter VK3BFG	VK3RTV, Mount View, Melbourne

# DUCT TAPE

It can't fix stupid, but it can muffle the sound

---

The future, the present, and the past walk into a bar.  
Things got a little tense.

---

Maybe if we start telling people their brain is an app, they'll want to use it.

---

Despite the high cost of living, it remains popular.

---

What's the difference between ignorance and apathy?  
I don't know and I don't care.

---

They told me a mask was enough to get into the supermarket.  
They lied, everybody else was also wearing pants.

---

What's the most terrifying word in nuclear physics?  
"Oops!"



The Shepparton Hamfest is back  
Another date for the calendar

Sunday 11th September



St Augustine's Church  
Orr Street Shepparton  
Doors open at 10.00am  
Entry fee is still only \$5.00

## *Australia Ham Radio 40 Meter Net*



7 Days a Week  
10am Local time  
(East coast)

**7.100 MHz LSB**

Approximately + or – QRM

Hosted by Ron VK3AHR

---

## NEVARC 2 Meter Net

Net Control VK3ANE

*NEVARC Linked Repeaters*

***VK2RWD, VK3RWO, VK3RWC***

**Wednesday - 8.00pm**

**Local time**

President, VK3VS, Matt  
Vice President, VK2VU, Gary  
Secretary, VK2BFC, Frank  
Treasurer, Amy Bilston



## NEVARC CLUB PROFILE

### History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.

As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.

NEVARC is an affiliated club of the Wireless Institute of Australia and The Radio Amateur Society of Australia Inc.

### Meetings

Meetings details are on the club website, the Second Sunday of every month, check for latest scheduled details.

Meetings held at the Belviour Guides Hall, 6 Silva Drive West Wodonga.

Meetings commence with a BBQ (with a donation tin for meat) at 12pm with meeting afterwards.

Members are encouraged to turn up a little earlier for clubroom maintenance.

Call in Via VK3RWO, 146.975, 123 Hz tone.

### NEVARC NETS

#### HF

7.100 MHz      7 Days a Week - 10am Local time

#### VHF

VK2RWD      Wednesday - 8.00pm Local time

NEVARC Linked Repeaters: VK2RWD, VK3RWO, VK3RWC

### Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

**Website:**      [www.nevarc.org.au](http://www.nevarc.org.au)

**Postal:**

NEVARC Secretary  
PO Box 8006  
Birallee Park  
Wodonga Vic 3690

**Facebook:**      [www.facebook.com/nevicARC/](https://www.facebook.com/nevicARC/)



All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio.

Contributions to NEVARC News are always welcome from members.

Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable.

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While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.

This is particularly true for pre-planned outdoor activities affected by adverse weather etc.

The club website <http://nevarc.org.au> has current information on planned events and scheduled meeting dates.

You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at [www.wia.org.au](http://www.wia.org.au). The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This WIA service is FREE.